

FINAL REPORT

CITY OF SEGUIN

CONTRACT NO. 582-14-40158

PROJECT NAME: GERONIMO CREEK WPP IMPLEMENTATION – OSSF REMOVAL

PREPARED IN COOPERATION WITH THE
TEXAS COMMISSION ON ENVIRONMENTAL QUALITY AND
U.S. ENVIRONMENTAL PROTECTION AGENCY

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BACKGROUND AND OVERVIEW

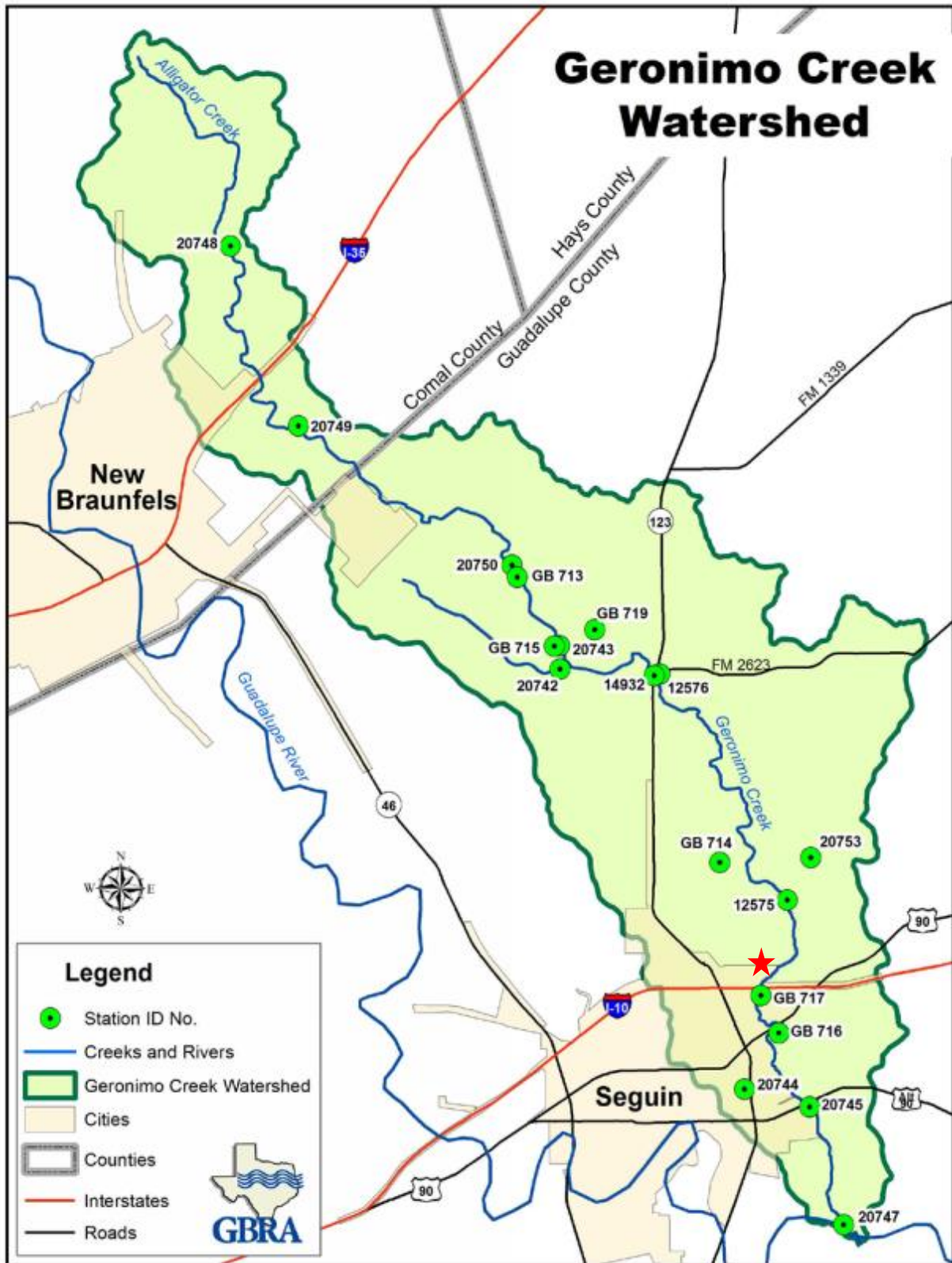
Following the annexation of the Oak Village North (OVN) Subdivision, the City of Seguin extended sanitary sewer service to residents of the subdivision, which was previously served by private on-site sewage facilities (OSSF, also known as septic systems). The Oak Village North subdivision is adjacent to Geronimo Creek in Seguin, Texas (exhibit A). A recent study of the water quality in the creek identified elevations of E. coli levels in the creek. The study was conducted as part of the Alligator and Geronimo Creeks Watershed Protection Plan, which was completed in 2012. The plan indicates that one source of bacteria and nitrate-nitrogen are failing septic systems located in the watershed. The Watershed Protection Plan also indicates that failing septic systems located nearest to streams and drainage areas are most likely to impact water quality. The plan identifies a bacteria impairment within the watershed and sets out goals to reduce nonpoint source pollution due to a high concern for nitrate-nitrogen levels.

The OVN Subdivision was created in 1973 and was located in the unincorporated area of Guadalupe County. Since sewer service was not available in the area at the time of development, the homes constructed in the subdivision relied on private septic systems. A total of 147 homes have been constructed to date, with only a few lots remaining vacant. Many of the homes in the subdivision were constructed over 30 years ago and records from Guadalupe County do not show a significant number of the original septic systems being replaced. Given the age of the septic systems, there was great concern that a high percentage of the systems were failing or on the verge of failing. As identified in the watershed protection plan, failing systems negatively impact water quality in the Geronimo Creek watershed.

When the three-year annexation plan for OVN was started in 2006, the City of Seguin began working with the residents of the subdivision on a Service Plan for new services to the area if the annexation was approved. Though most were not in favor of annexation, many of the residents were in favor of receiving sewer services from the City of Seguin following their inclusion into the Seguin city limits. The annexation of OVN was completed in 2009 and a plan for constructing sewer lines within the subdivision was prepared.

In 2012, with the sewer lines being installed in the subdivision, the City of Seguin submitted a grant application to the Texas Commission on Environment Quality (TCEQ) under the 319(h) Nonpoint Source Grant Program to assist the residents in decommissioning their existing septic systems upon connection to the City's sanitary sewer system. Knowing that the costs for constructing a new plumbing line from the residents' homes to the City's sewer line could be significant, the City worried that the residents would delay their connections once the sewer line was completed. With a goal to connect the existing homes to sewer service quickly and decommission the aging septic systems to avoid any further contamination to the Geronimo Creek watershed, the City of Seguin proposed a decommissioning project that would assist the homeowners in costs for decommissioning their septic tanks following connection to sanitary sewer.

EXHIBIT A: PROXIMITY OF OVN SUBDIVISION TO GERONIMO CREEK



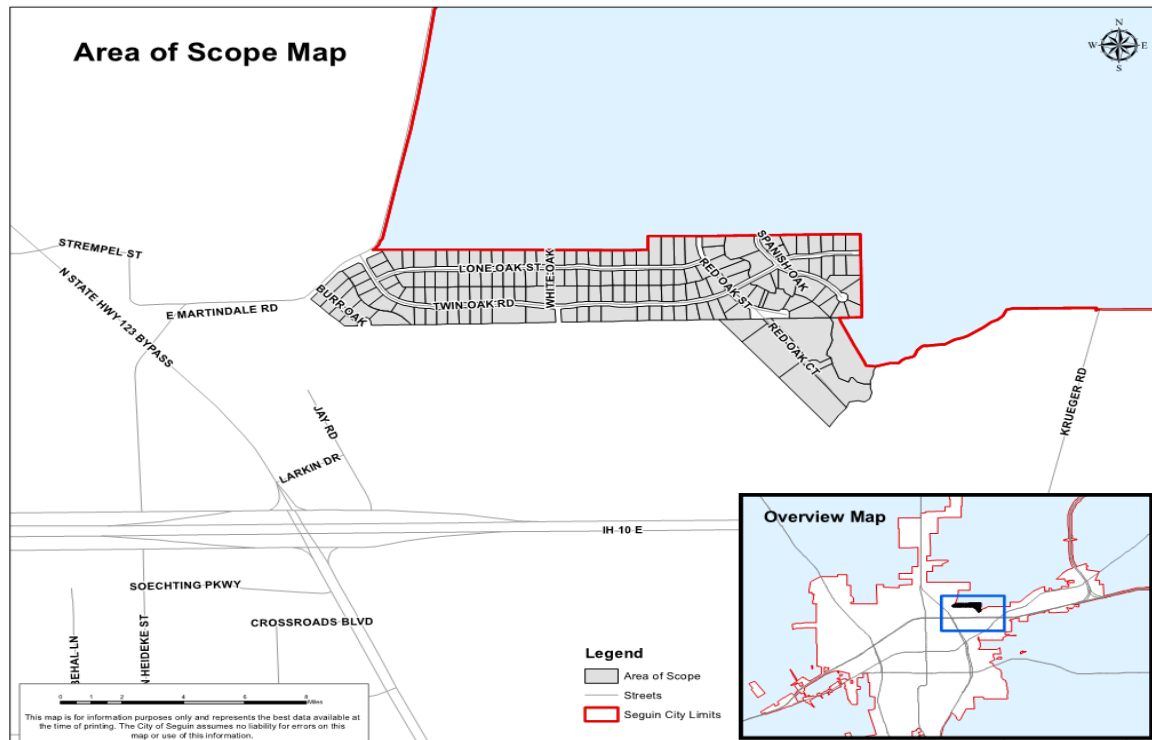
★ Oak Village North Subdivision

IMPLEMENTATION OF THE PROJECT

The unforeseen delay of the completion of the sanitary sewer service lines by the City of Seguin halted the immediate implementation of the grant program. The first year of the grant period was a waiting game while the City worked quickly to complete the installation of sewer to the OVN subdivision. With a three-year grant period, however, the City was confident that the project would not be delayed past the grant completion date.

While the City completed the sewer line, the Planning & Codes Department staff began preparing for the first public meeting and outreach to the residents of OVN. Contact lists were created by using the Guadalupe County Appraisal District's records and OVN subdivision plat records (Exhibit B). To help facilitate communications with the residents of OVN, the City created an OVN Committee comprised of five homeowners in OVN. The City met with the committee on May 1, 2014 to introduce the decommissioning program, present the proposed timeline of events, and receive questions for the Frequently Asked Questions (FAQs) that would be distributed to the residents.

EXHIBIT B: AREA OF SCOPE MAP FOR PROJECT



PUBLIC OUTREACH

Following the meeting with the Committee the City of Seguin drafted a meeting packet for the Community Meeting scheduled for May 27, 2014. The homeowners of the 147 homes in OVN were invited and encourage to attend the public meeting in which participation forms would be handed out for the program. In addition to mailing flyers to the residents, staff sent e-mails and also placed door hangers at each of the 147 homes to advertise the public meeting. The meeting was well attended and staff handed out packets that included a program timeline, program contact information, a participation

form, FAQs, and a payment plan agreement for those residents that needed a structured payment schedule to pay the sewer connection fees to the City.

During the meeting the City outlined the program in which the residents would be able to begin the decommissioning project in August, 2014. The city explained that a contractor hired by the City of Seguin would be performing all decommissioned under the grant program and that the cost for decommissioning would be paid for by funds from the 319(h) grant program and funds from the City of Seguin. The program would be free to the residents interested in participating, but participation was not mandatory. The grant program was being offered as an incentive to have residents connect to the City's sewer as quickly as possible thereby decreasing the chances of nonpoint source pollution into the Geronimo Creek watershed due to aged, failing septic systems. Those residents not interested in participating in the program would bear the cost of decommissioning their tanks on their own.

City staff made a powerpoint presentation at the meeting in which the details of the packet were discussed. Staff went over the FAQs in detail to ensure that the residents were well informed of the process. Staff answered a number of questions from the residents about the grant program as well as about the connection to the sewer. Residents were notified that participation forms were due no later than July 11, 2014. To encourage participation in the grant, the City also set a deadline in which a resident was required to pull a permit for the connection to sanitary sewer. That deadline was set for January 22, 2015. The final deadline to connect to the City sewer and decommission the existing septic tank was set for March 31, 2015.

Following the meeting, packets were mailed to the residents that were not in attendance at the meeting. As the deadline for the participation forms approached, staff sent reminders to all residents whom had not yet signed up and again hung door hangers at their residences. Public outreach was a high priority for the City of Seguin since the ultimate goal was to have all of the septic tanks in OVN decommissioned by the summer of 2016.

REQUEST FOR BIDS FOR CONTRACTOR

While city staff was communicating with the OVN residents, they were also drafting the Request for Bids in order to obtain a contractor for the decommissioning project. The bid package was submitted to TCEQ for review and approval in May. The bid was completed and advertised on June 1, 2014. A mandatory pre-bid conference was held on June 13, 2014 in order to provide all potential contractors with the requirements of the grant program. The scope of work that was outlined in the bid was explained during the meeting:

1. Locate and remove / collapse OSSF tank lids.
2. Pump OSSF thereby removing sewage waste.
3. Backfill tank with soil.
4. Replace / repair soil and vegetation.
5. Transport and dispose of sewage waste at the Geronimo Waste Water Treatment Plant.
6. Document and provide manifest indicating volume of waste removed and disposed.

7. Provide photographic evidence at each location of completed OSSF decommissioning including

- a) Site before
- b) Crushed lid
- c) Site after

City staff notified the contractors that they would help coordinate contact with the participating residents, providing them with copies of the participation forms filled in by the residents. On the participation forms the residents identified the approximate location of their septic systems and an estimated date of tying into the City sewer. This would allow the contractor to schedule the decommissioning jobs appropriately as residents were connected to the sewer. The City also explained that the bid should include a fixed price per septic tank. They were notified that there were up to 150 septic tanks since three of the homes residents identified two tanks on their properties.

The bid opening occurred on June 24, 2014. The City of Seguin received one bid. In conducting the reference check on the contractor, staff identified that the contractor did not have any experience decommissioning septic tanks. Based on the projects referenced in the bidder's proposal, the contractor specialized in underground utilities construction. One of the qualifications stated for the award of the bid was the capability and experience of the bidder. Since the bidder had no direct experience decommissioning septic tanks, staff felt it necessary to re-bid in order to find a qualified contractor with relevant experience.

The bid announcement was rescheduled with a few minor changes to ensure that the City only received bids from qualified contractors. The City added that the bidder be required to be a licensed plumber or a licensed septic installer. The contractor would be allowed to subcontract the disposal of the waste with a licensed hauler.

Due to the minor delay, staff contacted the OVN committee to alert them that the start of the project would be postponed in order to ensure that a qualified contractor is conducting the work in OVN. The committee was appreciative of our efforts to find a qualified contractor and concurred. The new bid opening was scheduled for July 29, 2014. Two bids were received and Stewart Plumbing was selected as the City's contractor.

SEPTIC TANK (OSSF) DECOMMISSIONING

With the contractor hired and the sewer lines completed, the City of Seguin (as well as many of the residents) were eager to start decommissioning their septic tanks. Due to the re-bid, the first tanks were not decommissioned until September 2014. The City worked closely with the contractor during the decommissioning process as well as with the residents. The contractor took all of the three required photos and added one additional "after" photo to show the tank filled and the ground restored. Four photographs were taken on four separate occasions for each decommissioned septic tank (Exhibit C):

1. Site Before Ground Disturbance
2. Decommissioned Tank
3. Filled Tank
4. Ground Restored to Original Condition (and re-sodded when applicable)

EXHIBIT C: PHOTOGRAPHS TAKEN DOCUMENTED COMPLETED WORK

C-1. Site Before Disturbance



C-2. Decommissioned Tank



EXHIBIT C: PHOTOGRAPHS TAKEN DOCUMENTED COMPLETED WORK

C-3. Filled Tank



C-2. Ground Restored to Original Condition



For the next year (September 2014 – September 2015) the contractor continued decommissioning septic tanks as residents continued to tie on to the public sewer system. City staff communicated regularly with the contractor and conducted inspections at all of the sites throughout the process. The City was very pleased with the progression of the sewer connections and the teamwork of the city staff as the project continued. The Department staff that were involved in the project were as follows:

Project Manager: Director of Planning & Codes
 Citizen Liaison & Primary Contact: Planning Assistant
 Inspector: Environmental Health Supervisor
 Inspector: Building Official

RESULTS

At the conclusion of the project, 131 septic tanks in OVN were decommissioned under the 319(h) program. With 150 septic tanks total in the OVN area, there was a grant participation rate of 87%. After conducting the decommissioning inspections during the grant program, the Environmental Health Supervisor estimated that approximately 65% of the septic tanks in the OVN Subdivision were failing, most likely due to the age of the systems.

The estimated potential load reduction at the time the grant application was drafted was based on a 100% participation rate of the 150 septic tanks in OVN. The potential load reduction was estimated at 7.35×10^{13} cfu/day of *E. coli*. Since participation was not mandatory, some of the residents opted to hire contractors independent of the grant program, therefore the participation rate was 87%. Using the formula with the actual number of decommissioned septic tanks (Exhibit D) yielded an estimated load reduction of 4.22×10^{13} cfu/day of *E. coli*.

EXHIBIT D: CALCULATION OF ESTIMATED LOAD REDUCTION

$$SepticLoad = NumberofSepticSystem s * \frac{10 \times 10^6 cfu}{100mL} * \frac{210gal}{household / day} * \frac{3758.4mL}{gal} * 0.63$$

Number of septic systems = 131 x 0.65 (65% failure rate) = 85 systems

10×10^6 cfu/100ml = the average estimated cfu (colony forming units) of fecal coliform in septic system effluent

210 gal/household/day = the average estimated effluent from a septic system

3758.4 mL/gal = conversion factor from mL to gallons

0.63 = conversion factor used to convert from fecal coliform to *E. coli*

CONCLUSION

The goal of the project was to reduce nonpoint source loading of E. coli and nitrate-nitrogen to Geronimo Creek through the decommissioning of septic tanks (OSSFs) in an area with high failure rates due to aging systems. With the proximity of the Oak Village North Subdivision to Geronimo Creek, impacts from failing septic systems within the area can be significant and can negatively impact the water quality within Geronimo Creek. Removing 131 septic tanks from the Geronimo Creek watershed is a significant accomplishment towards the on-going implementation of the Geronimo and Alligator Creeks Watershed Protection Program. The City of Seguin is very pleased with the success of the program and the potential reduction of nonpoint source pollution into Geronimo Creek as a result of the 131 tanks recently decommissioned.